# BMI seriously flawed

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Lest you think that all problems can be solved by following established guidelines, answer the following question:   Why are the majority of NBA basketball players obese according to the very widely used Body Mass Index (BMI)?  The answer lies in the incorrect physics of the BMI!  The usual incorrect BMI formula is

(usual) BMI = (weight in kg) / (height in meters)$^2$

= 704 times (weightg in pounds) / (height in inches)$^2$

If one object (person) is twice as tall as another, then in order to have the same proportions, it must also be twice as wide *and* twice as thick.  Therefore it will weigh 8 times as much.  That is, the weight is in proportion to the *cube* of the height.

The BMI uses the *square* of the height and therefore if one person is twice as all as another, the BMI expects him to be either twice as wide or twice as thick but not both.  The tall person would look very strange indeed.  Folks, this is really pretty basic physics.  All current 'knowledge' is not correct.

Using the height and weight of several Miss Americas years ago I came up with the proper formula.  It matched the BMI weight of 141 pounds expected for 5'8". The formula is

(weight in pounds) = (height in inches)$^3$ divided by 2,222

and is the same for women and most men, although very muscular men will weigh more.  The difference is men are about 40% muscle; women are about 30% muscle but have more plumpness in all the right places.

If you wish to convert height and weight into a 'correct' BMI, use corrected

BMI = (weight in pounds) multiplied by 47,777 divided by (height in inches)$^3$

The error at 4'10" using the 'accepted' BMI formula is 17% too high and at 6'8" is 15% too low.  For example, the usual way of calculating the BMI for someone 6'8" using the square of the height yields 196# for a normal BMI of 21.5 whereas that weight for a person that height should be 230# for a corrected 'normal' BMI of 21.5.  In fact, the weight calculated by the 'usual' BMI of 196# is below the minimum he should weigh.